Nassau County

Energy Policy and Action Plan

Nassau County Executive

Thomas R. Suozzi

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Energy Policy and Action Plan

Nassau County's Energy Policy is designed to achieve long term, far reaching impacts in the way energy is used in the County to conserve energy, reduce dependence on foreign oil, improve air quality, and save taxpayer dollars. In order to accomplish these goals, Nassau County has developed a multifaceted and comprehensive energy action plan. The initiatives outlined in this plan offer solutions to the major energy issues faced by both the County and the nation as a whole. The action plan is comprised of six major elements consisting of initiatives which have been completed, those that are currently being implemented and those planned for the future.

Nassau County intends to lead by example. By demonstrating that action can produce significant results, the County seeks to influence the way energy is used and conserved by local governments, the private sector and the public.

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USE ALTERNATIVE FUEL VEHICLES

Alternative Fuel Vehicle Program

The County has developed a plan to replace its non-emergency light duty vehicles with alternative fuel vehicles over a ten year fleet replacement program. According to the US Energy Information Administration, the US transportation sector is over 97% fueled by petroleum, over half of which is imported. By diversifying away from gasoline vehicles and conserving energy, the County will hedge against the economic risk associated with high oil prices and reduce dependence on foreign oil. In addition, this replacement program will substantially reduce emissions and improve air quality. The replacement program will include the following alternative fuel vehicles:

Compressed Natural Gas (CNG) Vehicles

The County plans to replace a number of its aged and inefficient light duty vehicles with compressed natural gas vehicles. The County has purchased 40 CNG sedans with a grant from The Greater Long Island Clean Cities Coalition and the New York State Energy Research and Development Authority for $325,000. The grant pays 80% of the incremental costs for the purchase of 40 CNG Honda Civics, "America's Greenest Car" as rated by the American Council for an Energy Efficient Economy. These new CNG vehicles will generate only a fraction of the emissions of the vehicles they will replace. In addition, they will reduce demand for foreign sources of energy considering the vast majority of natural gas consumed in the United States is domestically produced.

Additional purchases of CNG vehicles are anticipated over the next several years.

Ethanol Flex-Fuel Vehicles

The County has purchased 17 flex-fuel ethanol powered vehicles. These vehicles can run on conventional gasoline or E85 fuel which is an 85% ethanol/15% gasoline mixture. New flex-fuel vehicles using E85 fuel will be substantially cleaner than the vehicles they will replace. Ethanol vehicles produce fewer green house gases because some of the carbon dioxide that is released in ethanol production and combustion is recaptured by plants grown to produce ethanol. Using ethanol reduces demand for foreign oil.

Additional purchases of flex-fuel vehicles are anticipated over the next several years.

Hybrid Electric Vehicles

The County has purchased two hybrid electric vehicles. Compared with the aged vehicles slated for replacement, these new hybrid vehicles are more fuel efficient and will generate less hydrocarbons, carbon monoxide and nitrous oxides, as well as, reduce demand for foreign oil.

Additional purchases of hybrid electric vehicles are anticipated over the next several years.

Electric Vehicles

The County was provided two GEM electric cars by Long Island Power Authority (LIPA). These zero emission vehicles will be used by the Parks Department to replace conventional gasoline vehicles for routine tasks.

The County will consider additional acquisitions of electric vehicles over the next several years.

Hydrogen Vehicles

The viability of hydrogen technology, such as hydrogen internal-combustion and fuel cell vehicles, will be assessed and potentially phased-in as vehicles become available. If the hydrogen is produced with clean, renewable energy, these hydrogen vehicles will generate no emissions other than water vapor and reduce dependence on foreign oil.

Green Fuels Filling Stations

The County is planning to develop green fuels filling stations at various County facilities to service its diverse fleet of alternative fuel vehicles. Green fuels will include:

Compressed Natural Gas

The County plans to locate a Keyspan transportable CNG filling station at Eisenhower Park. In addition, Long Island Bus operates a CNG filling station in Garden City which is available for refueling Nassau County's CNG vehicles.

E85 Ethanol

The County is in the process of converting one of its gasoline tanks to dispense E85 (85% ethanol) to services the County's flex fuel vehicles. It is planned to have this E85 filling station in operation in 2005.

Bio-diesel

A bio-diesel dispensing facility will be developed at the Hicksville Highway Division garage where most heavy duty vehicles are fueled. The County is currently purchasing 20,000 gallons of B-20 bio-diesel. This fuel, which is 80% conventional diesel fuel and 20% fuel derived from natural, renewable sources, results in less harmful emissions and reportedly extends engine life. After evaluating program performance, the County may expand the use of bio-diesel in its fleet of heavy duty vehicles.

Ultra Low Sulfur Diesel

The County will use ultra low sulfur diesel for its diesel fuel powered vehicles beginning in October 2006 when new EPA diesel rules go into effect which require that ultra low sulfur diesel be made widely available throughout the United States.

Hydrogen

Depending on the County's assessment and the state of hydrogen technology commercialization and viability, the County will consider building a hydrogen filling station to fuel its hydrogen powered vehicles if acquired in the future.

Long Island Bus Compressed Natural Gas Fleet

In addition to light duty vehicles, Long Island Bus, which is Nassau County's bus system, with financial assistance provided by Nassau County, has become the largest 100% CNG bus fleet in the nation outside California with over 330 CNG busses. The fixed route bus system carried 30 million passengers in 2004. It currently provides for 54 bus routes serving 96 Long Island communities, 46 Long Island Railroad (LIRR) inter-modal transfer stations, five New York City Transit subway stations and seven major shopping areas in Nassau County.

Diesel Emissions Reduction Programs

The County will implement programs with the potential to substantially reduce emissions from the County's fleet of heavy duty vehicles. This will be achieved by the following:

Utilize Bio-diesel in Heavy Duty Vehicles

The County will purchase 20,000 gallons of B-20 bio-diesel fuel in 2005. Use of this fuel generates less harmful emissions, reportedly extends engine life and reduces dependence on foreign sources of oil. After evaluating performance, the County will consider expanding the use of bio-diesel in its entire fleet of heavy duty vehicles.

Utilize Ultra Low Sulfur Diesel Fuel in Heavy Duty Vehicles

The County will use ultra low sulfur diesel for its diesel fuel powered vehicles beginning in October 2006 when new EPA diesel rules go into effect which require that ultra low sulfur diesel be made widely available throughout the United States.

Retrofit Diesel On-road Vehicles with Particulate Filters

In conjunction with the use of ultra low sulfur diesel, the County will investigate the feasibility of installing the best available retrofit technology for its fleet of over 300 non-emergency diesel fuel powered on-road vehicles to significantly reduce air pollution emissions. The County will investigate potential funding sources to implement these retrofits, if proven feasible.

Specify Clean Air Construction Equipment

The County will require public works contracts specify that all diesel powered non-road vehicles use ultra low sulfur diesel as well as incorporate the best available retrofit technology for reducing pollutant emissions.

Vehicle Idling Reduction Measures

The County will investigate the feasibility of a local law requiring that idling of light duty engines be restricted to a time limit such as three or five minutes per hour. New York State law already prohibits heavy duty vehicles from idling for more than five minutes except in certain circumstances. The County will identify high priority areas of enforcement in an effort to reduce emissions and conserve fuel.

REDUCE AUTOMOBILE USE AND TRAFFIC CONGESTION

The County will continue a number of traffic congestion mitigation programs to conserve energy and reduce air pollution emissions, as well as improve traffic safety. These include:

Travel Demand Management

The County has developed a program, initially for County employees, to reduce vehicle miles traveled and to shift travel demand to off-peak times through a variety of initiatives, including TransitChek (a tax benefit for employees who use mass transit), LITM Greater Long Island Rideshare Program and NuRide (an online ridesharing program), Guaranteed Ride (a program to provide free emergency transportation for those participating in ridesharing) and transit promotions. Other travel demand management initiatives being considered include dedicated parking spaces for ridesharing vehicles and compressed and staggered work schedules. After successful implementation of this program for its employees, the County will work with the business community to utilize travel demand management.

Traffic Signal Coordination

The County will continue its programs to interconnect, and better control and manage 1600 County-operated traffic signals to reduce traffic congestion and air pollution emissions, save fuel and decrease accidents. These programs include installation of a new central computer system with the capacity to control all County-operated traffic signals, replacement of older traffic signal controllers with new microprocessor-based controllers, and update of traffic signal timing and coordination to improve traffic flow.

Roadway Improvements

The County will continue to provide for road improvement projects intended to relieve traffic congestion which includes improvement of intersections, road widening, and turning lane and signal installation.

Traffic Incident Management

The County will install video cameras beginning with Old Country Road to monitor traffic conditions and enable authorities to respond immediately to emergency situations. The result will be improved safety and a reduction in vehicular delays and emissions.

AGGRESSIVELY CONSERVE ENERGY

Completed Energy Conservation Initiatives

Energy Upgrades to Five Major Nassau County Facilities

The County is engaged in a partnership with the New York Power Authority (NYPA) under the Energy Services Program to identify and implement energy conservation improvements to Nassau County facilities. As part of this program, NYPA provides low cost, up-front financing allowing the County to avoid large, up-front financial outlays for major renovation to its facilities. Repayment of the initial investment is amortized over ten years with recovery though energy cost savings. To date, five major facilities have been upgraded. These facilities, annual cost savings, energy reduction and environmental benefits are the following:

	Supreme Court	Nassau County Courthouse	Family Court	Nassau University Medical Center	Nassau Community College	**ANNUAL TOTAL**
Annual Cost Saving	$105,800	$75,824	$35,293	$385,445	$784,002	**$1,386,364**
Energy Use Reduction	838 MWh	490 MWh	234 MWh	4,430 MWh	6,106 MWh	**12,098 MWh**
Estimated Annual Greenhouse Gas Reduction	5000 Tons	3,000 Tons	1,000 Tons	2,300 Tons	3,300 Tons	**14,600 Tons**

Source: New York Power Authority

Energy Conservation in Renovations and New Construction Projects

Nassau County has partnered with the Long Island Power Authority (LIPA) under the Commercial Construction Program to receive consulting services to reduce energy use in renovations and new construction projects, as well as receive rebates for using energy saving technologies and designs.

Office Recycling Pilot Program

The County has instituted an office recycling program at the Executive Office Building. The purpose of this program is to save natural resources, conserve energy and reduce pollution. In the first six months of the program, employees recycled over 80 tons of paper, cardboard, mixed beverage containers and electronic equipment. As a result of this effort, energy has been conserved and air pollution reduced. According to New York State Department of Environmental Conservation figures, for every ton of paper recycled, the County will indirectly save over 460 gallons of oil, 4,100 kilowatt hours of electricity and 60 pounds of air pollution emissions. It is planned to expand the recycling program to essentially all County facilities in 2006.

In-Progress Energy Conservation Initiatives

Energy Upgrades to Seven Major Nassau County Facilities

Under Nassau County's partnership with the NYPA, seven additional Nassau County facilities have been identified for energy conservation improvements. A Feasibility Study and Detailed Design Report have been prepared by NYPA and approved by the County. Energy upgrades are scheduled to be completed by fall 2006. These facilities, planned energy conservation measures, cost savings, energy reduction and environmental benefits are provided below:

Energy Conservation Measure	100 Supreme Court Drive	240 Old Country Road	252 Old Country Road	262 Old Country Road	272 Old County Road	400 County Seat Drive	Police HQ
Lighting Upgrades and Controls		♦				♦	
High-Efficiency Motor Upgrades	♦			♦			
Energy Management and Control System Installations	♦	♦	♦	♦	♦	♦	♦
Chiller Plant Upgrades		♦		♦			
Boiler Room Upgrades		♦					
Burner Upgrades						♦	
Window Upgrades						♦	
Condensate Vacuum Return Unit Replacements				♦		♦	
Variable-Air-Volume (VAV) Upgrade		♦					
Anticipated Results:	Annual Energy Bill Cost Savings: $841,500 Annual Electricity Use Reduction: 5,070 MWh Annual Gas / Oil Use Reduction: 25,400 MMBtu Annual Greenhouse Gas Reductions: 4,360 Tons						

Source: New York Power Authority

Energy Conservation in Renovations and New Construction Projects

As part of the County's Real Estate Consolidation Plan, all new construction and renovations of existing buildings are required to comply with the *New York State Energy Conservation Construction Code* and incorporate the basic principles of "Green Building" design. Under its partnership with LIPA's Commercial Construction Program, Nassau County is working to

reduce energy use in renovation and new construction projects, as well as take advantage of rebates for using energy saving technologies and designs.

Old Courthouse Renovation

The renovations of the Old Courthouse Building will incorporate energy efficient heating and cooling systems, an energy management system, fluorescent light fixtures where possible, occupancy sensors to ensure that lights are turned off in unoccupied areas, Laylights, which are similar to skylights, to allow for the use of natural light, day light views for approximately 70% of the building, energy efficient windows and a white roof over the Portico to improve cooling efficiency. As of August 2005, LIPA is reviewing drawings and specifications for the Old Courthouse renovation to identify energy conservation measures eligible for rebates which could be up to $300,000.

Parks Outdoor Lighting Rehabilitation

The County has developed a multi-year program to replace outdoor lighting systems in Nassau County Parks with light pollution reducing, energy efficient systems. Lighting rehabilitations on Eisenhower Park Boulevard, Aquatic Center Path and Nickerson Beach Café will be completed by September 2005.

Office Recycling Expansion Program

Currently the County has initiated a pilot office recycling program at the County Executive Office Building, which has been very successful. It is planned to expand the office recycling program to essentially all County facilities in 2006. A significant amount of energy will be conserved and air pollution reduced as a result of this effort.

Planned Energy Conservation Initiatives

Planned Energy Upgrades to County Facilities

NYPA has completed a Feasibility Study for energy conservation improvements at the Cedar Creek and Bay Park water pollution control facilities. Upon completion and approval of a Detailed Design Report, the County will begin implementing these upgrades. The County will continue to work with NYPA, LIPA, Keyspan and the New York State Energy Research and Development Authority (NYSERDA) to identify additional County facilities for energy conservation improvements. NYPA and the County anticipate that up to 200 County facilities will be assessed for energy efficiency improvements.

LED Traffic Signal Replacement

The County is replacing all 1600 County operated traffic signals with LED indicators. This initiative will significantly reduce County electricity use.

Energy Star Office Equipment

The County will adopt a procurement policy requiring that all office equipment purchased by the County, when available, be Energy Star rated.

EFFECTIVELY MANAGE ENERGY USE

Electric Bill Consolidation and Reporting System

Nassau County, in partnership with LIPA, consolidated 1770 monthly electric bills into a single payment under a new electronic payment system known as TEMPO. This new payment system enables the County to assess its energy use in a comprehensive, meaningful way for the first time. The County has developed an internal software application to separate cost and usage data and produce facility-by-facility reports to assess energy use and identify opportunities for energy efficiency improvements, verify the results of energy conservation programs and make reporting on energy and environment issues much more straightforward.

Retrofit Energy and Capacity Program

The County is partnering with LIPA under the Retrofit Energy and Capacity Program (RECAP) to achieve 2MWs of electricity savings in County facilities through the use of energy efficient technologies and efficient energy use practices.

Utility Expense Reduction Services Contract

In addition, the County is retaining a consultant under an expense reduction services contract to identify additional utility savings across a $35 million utility cost base where 80% of the cost savings will go to the County. Opportunities for energy savings will be explored across a wide range of activities.

Energy Coordinator

An Energy Coordinator will be appointed to ensure the effective implementation of the County's energy policy, develop and oversee the County's energy programs, meet with outside energy providers and advocates, and report to the County Executive on matters related to energy. The Energy Coordinator will also establish energy conservation goals to be achieved through immediate, short term and long term strategies, monitor energy use and analyze the effectiveness of energy conservation strategies. The Energy Coordinator will have access to real time energy data to evaluate progress.

EXPAND RENEWABLE ENERGY USE

Green Power Purchases

A resolution was unanimously approved on March 7, 2005 by the Nassau County Legislature to purchase 25% of Nassau County's electricity demand from renewable, carbon-neutral sources by 2010. A plan has been developed to purchase green power beginning in 2006. A green power purchase of 25% of the County's current electricity demand equals approximately 23,000,000 kilowatt hours per year. Based on emissions factors available through the United States Environmental Protection Agency, purchase of 25% of all County electricity with green power will reduce carbon dioxide (CO_2) emission by 19,000 tons per year, nitrogen oxides (NO_x) by 29 tons and sulfur dioxide (SO_2) by 53 tons.

Digester Gas Use in County Power Plants

The County operates two on-site electricity generation plants to produce nearly 100% of the energy used at both Cedar Creek and Bay Park Water Pollution Control Facilities. Both of these plants generate about 25% of their electricity from digester gas, a byproduct of the sewage treatment process which is primarily methane. In 2004, the power plant at Cedar Creek used nearly 270 million cubic feet of digester gas and Bay Park used approximately 176.5 million cubic feet.

Clean Energy Research and Development

Geothermal Energy at Sands Point Preserve

In June 2003, Keyspan, in partnership with Nassau County, launched a research and development initiative to install, test and evaluate ten GeoColumns, an advanced direct exchange geothermal technology**,** at the Sands Point Preserve to provide clean and renewable heating and cooling energy to a park facility.

Fuel Cell Pilot Program and Feasibility Study

In February 2004, the Long Island Power Authority, in partnership with Nassau County, installed a 5kW fuel cell at Nassau Community College to provide electricity and heat energy to the College Center Building. In addition, the County is currently studying the feasibility of using fuel cells and other innovative technologies at additional County facilities, including the Old Courthouse in Mineola.

Alternative Energy Demonstration Center

An existing Nassau County facility will be renovated to demonstrate the latest energy conservation and renewable energy technologies. The Alternative Energy Demonstration Center is likely to be part of the Eisenhower Park Aquatic Center and could potentially include energy efficient design details and equipment, passive solar design, photovoltaic panels, solar water heating, wind turbines, geothermal heat pump, fuel cells and other technologies.

LIPA Offshore Wind Energy Park

The County strongly supports the LIPA and FPL Energy proposed Offshore Wind Energy Park.

Solar Sales Tax Exemption

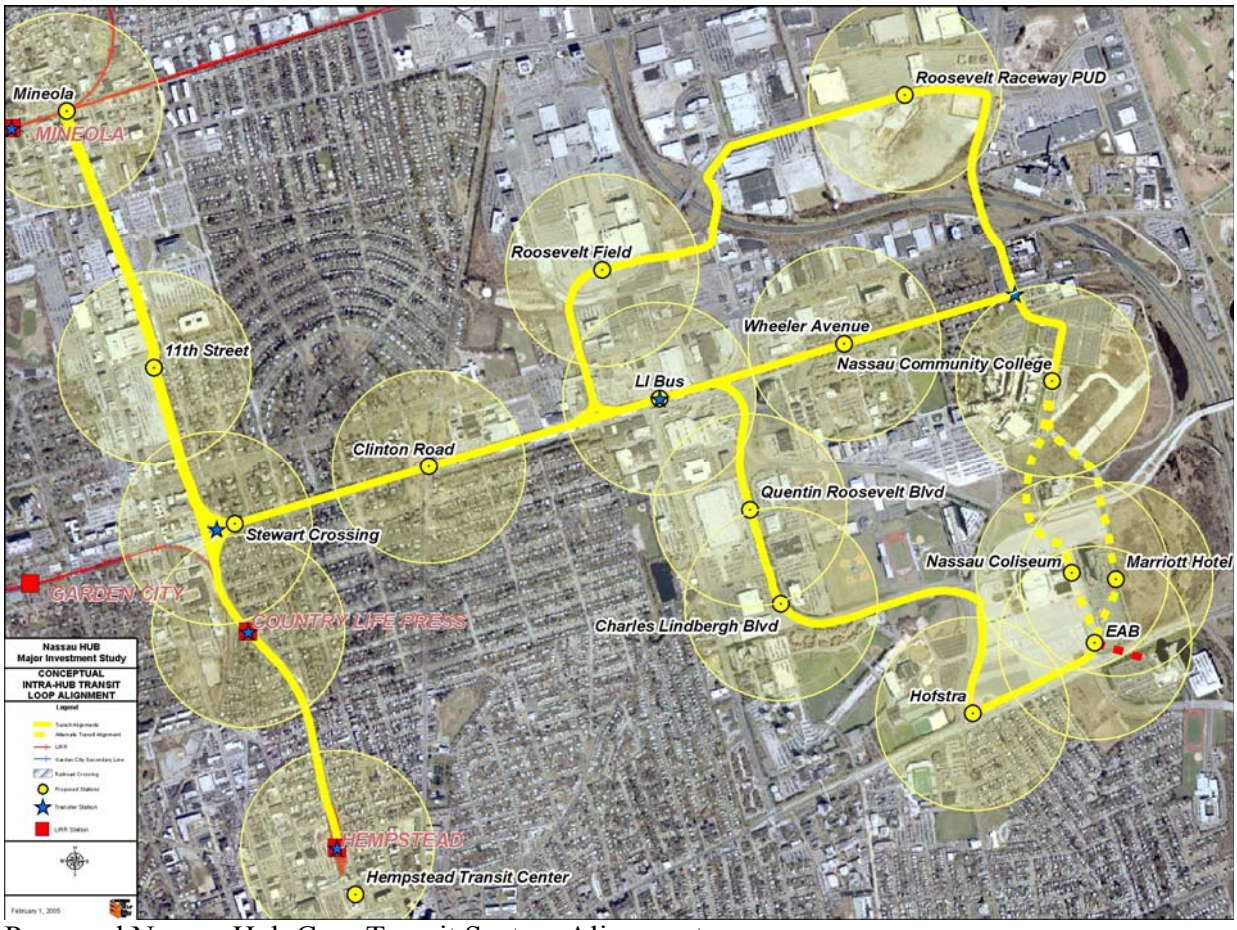
The County will provide a sales tax exemption for installation of residential solar electric and water heating systems.

FOSTER SMART GROWTH

The Nassau Hub

Nassau County has embarked on an ambitious project to redevelop the Nassau Hub area to create a mixed-use, transit-oriented downtown for Nassau County. The Nassau Hub Major Investment Study examines various transit system alignments and systems, including Bus Rapid Transit (BRT), Light Rail Transit (LRT) or Automated Guideway Transit (AGT) to serve a range of land uses. The Nassau Hub will have significant benefits related to transportation energy use, traffic congestion mitigation and emissions reductions which include:

- For the first time, an alternative to driving in the Hub is provided via new expanded, faster and more frequent transit services
- Creates new links between LIRR stations and major activity centers
- Establishes new links between various area activity centers
- Addresses the lack of north-south transit connectivity
- Provides a foundation to serve both intra-County travel patterns as well as reverse peak commuters from New York City



Proposed Nassau Hub Core Transit System Alignment

Planning Federation
The Nassau County Planning Federation was established in May 2004 with the mission to assist local town, village and city governments in the development and implementation of sound and effective planning policies and practices. The Planning Federation will have a significant role in supporting local smart growth initiatives. Coordinating local efforts is essential to achieving more energy efficient and livable environments.

Transit-Oriented, Mixed-Use Development
As part of Nassau County's Traffic and Transportation Policy, the County will champion the principle that pedestrian/bicycle-friendly, higher density, mixed-use downtowns and other commercial centers linked by affordable and convenient transit will reduce unnecessary travel, create more livable environments and bolster the economy. The County will continue to work with local governments to identify opportunities for Planned Unit Developments (PUDs) and other zoning techniques to enable mixed-use, transit-oriented development in areas where current zoning might inhibit such projects.

Open Space Preservation and Brownfield Redevelopment to Encourage Infill Development
Last November, the citizens of Nassau County overwhelmingly voted (passed with 77% of the vote) to approve a $50 million Open Space, Clean Water Environmental Program**.** The result will be to focus new development toward infill areas where infrastructure is already in place, including transit, therefore reducing unnecessary automobile trips. In addition, the County's Brownfield Program supports the redevelopment of abandoned and underutilized commercial and industrial properties in areas with existing infrastructure and transit, also reducing automobile usage.

Trailways and Bike Paths
The County is devising a conceptual design for a comprehensive County wide trailway/bikepath system. The County is working with local municipalities through the Planning Federation to align various efforts into a unified planning framework. Over the next several years, the County will facilitate and seek funds for the development of a multi-faceted trail system throughout the County.